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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,258	10/17/2000	Ossi I. Grohn	4015-750	3670
24112	7590	12/15/2004	EXAMINER	
COATS & BENNETT, PLLC P O BOX 5 RALEIGH, NC 27602			ODLAND, DAVID E	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/690,258

Applicant(s)

GROHN ET AL.

Examiner

David Odland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-29 is/are allowed.
- 6) ☒ Claim(s) 30-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The following is a response to the amendments filed on 09/29/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 30,31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nyberg et al. (GB 2323827), hereafter referred to as Nyberg, in view of Oliver et al. (USPN 3,924,082), hereafter referred to as Oliver.

Referring to claims 30 and 31, Nyberg discloses a method of providing timing information to a plurality of radio heads connected to a central unit of a wireless communications system (an Air Frame Synchronization (AFS) signal is transmitted to a plurality of radio transceivers (see figure 1 and page 2)), comprising transferring data between the central unit and a first radio head via a first set of conductors of a first cable (a central unit sends data to each radio transceiver (see figure 1)), said first radio head having a wireless radio transceiver (the radio transceiver (see figure1)), transferring data between the central unit and a second radio head via a first set of conductors of a second cable, said second radio head having a wireless radio transceiver (data is send to another radio transceiver over another cable (see figure 1)), sending timing data from said central unit to said first radio head via a second set of conductors

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of said first cable (the AFS is send to the radio transceivers (see figure 1)), sending timing data from said central unit to said second radio head via a second set of conductors of said second cable (the AFS is send over another cable to another radio transceiver (see figure 1)), wherein the timing of radio signal transmissions by said wireless radio transceiver of said first radio head depends on said timing data supplied to said first radio head via said second set of conductors of said first cable (the AFS is used to coordinate the timing of the each radio transceivers (see page 1 and 2 and figure 1)), and wherein the timing of radio signal transmissions by said wireless radio transceiver of said second radio head depends on said timing data supplied to said second radio head via said second set of conductors of said second cable (the AFS is used to coordinate the timing of the each radio transceivers (see page 1 and 2 and figure 1)).

Although, Nyberg discloses sending the data and timing in a single cable using a Time Division multiplexed (TDM) format, Nyberg does not disclose that that timing and data are send through different conductors of the same cable. However, Oliver discloses a system wherein various time slots (i.e. channels) of a TDM signal are transported over separate conductors (i.e. wires) (see column 4 lines 19-25 and figure 2)). It would have been obvious to one skilled in the art at the time of the invention to implement the Nyberg system with this feature because transmitting signals in parallel over separate wires will allow the system to operate faster. Note, regarding claim 31, Oliver discloses 8 conductors associated with the TDM signal (see item 22 of figure 2).

Referring to claim 33, Nyberg discloses the system discussed above. Nyberg does not disclose that the data transferred over the cabling in transferred using the Ethernet protocol. However, Ethernet is a well-know and widely used standardized protocol. Therefore, it would have been obvious to a skilled artisan at the time of the invention to implement the Ethernet

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protocol in the Nyberg system because it would allow the Nyberg system to conform to an already existing standard.

4. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nyberg in view of Oliver and further in view of Kirmse (USPN 6,262,993), hereafter referred to as Kirmse.

Referring to claim 32, Nyberg discloses the system discussed above. Nyberg does not disclose that the cables are unshielded twisted pair cables. However, Kirmse discloses a system wherein unshielded twisted pair is used for transferring data (see column 5 lines 19-46). It would have been obvious to one skilled in the art at the time of the invention to implement the cable of Nyberg with UTP cable, as disclosed in Kirmse, because as Kirmse points out in column 5 lines 22 and 23, UTP is commonly installed and cost saving cabling.

Allowable Subject Matter

5. Claims 1-29 are allowed.

Response to Arguments

6. Applicant's arguments filed 09/29/2004 have been fully considered but they are not persuasive.

On page 14 first paragraph the Applicant argues that Nyberg does not disclose separate links but that the remote units are part of a bus. The Examiner respectfully disagrees. The bus aspect discussed in Nyberg is with respect to *the prior art* (see page 1 lines 24-28)). Nyberg clearly discloses on page 3 lines 11-15 and in figure 1) that "Each of the digital interfaces is

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connected over a respective TDM (or time division multiplexed) link, also referred to herein as a pulse code modulated (or PCM) link, to a respective remote radio transceiver..." Thus indeed each interface has a link to each transceiver at each of the remote units which are a far distance apart and so there are multiple cables used.

On page 14 second paragraph the Applicant contends that Nyberg does not disclose each cable having two sets of conductors. The Examiner respectfully disagrees. Nyberg discloses on page 5 line 28 through page 7 line 28 through page 8 line 5 and figures 4 and 5, that signals are passed from the remote unit to the central unit in a TDM format and then looped back to the remote unit. In order for TDM traffic to be looped back it must be transmitted and received simultaneously thus there must be at least two separate conductors (i.e one for transmitting to the central unit and one for receiving. Furthermore, figure 5 shows two different conductors for the link.

In response to applicant's argument on page 15, that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Nyberg may happen to mention not having to require additional infrastructure but the prior art issue Nyberg is aiming to relieve has to do with timing and synchronization. The reasons set forth by the Examiner for combining Nyberg with Oliver is to resolve issues of speed. It is very well known in the art to produce communications systems that

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can operate at high speeds. Thus, a skilled artisan at the time of the invention would surely have been motivated to use multiple conductors for transporting each of the timing and data information as disclosed in Oliver, with the Nyberg system because transferred the information in parallel will allow the system to operate faster.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Odland whose telephone number is (571) 272-3096. The examiner can normally be reached on Monday - Friday from 8am to 5pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached at (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

deo

December 10, 2004



HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600